

We Claim:

1. A method of web tracking adjustment for guiding a moving web in a predetermined path of travel relative to a stationary frame, comprising:

5       biasing a steering roller in a gimbal direction; and,  
adjusting said bias to achieve desired tracking.

2. The method of claim 1 wherein said steering roller has a lateral constraint, and said bias allows the web to ride against said lateral constraint without damaging the web.

10     3. ~~The method of claim 2 wherein said steering roller is mounted on a roller shaft, and said lateral constraint comprises an edge guide which is rotatably mounted on said roller shaft and is axially slidably relative thereto.~~

4. The method of claim 2 wherein said steering roller is biased by a spring having an end one and an end two mounted between the frame and one end of said steering roller such that said spring end one is mounted to said frame, and said spring end two is mounted to said steering roller, such that said spring applies a rotational force on said steering roller about a gimbal axis.

15     5. The method of claim 4 wherein said adjustment comprises applying a pre-load to said spring to achieve desired tracking.

20     6. The method of claim 5 wherein said spring is mounted to said frame by attaching a mounting nut to said spring end one, and threading a screw through the frame, such that said mounting nut is threaded onto said screw to apply the desired pre-load on said spring.

25     7. The method of claim 1 further comprising a housing and spring flexures, wherein said housing is pivotally mounted to said frame such that said housing pivots about a gimbal axis, and wherein said steering roller is mounted on a roller shaft, which said shaft is in turn mounted to said housing by said spring flexures, such that said spring flexures allow said steering roller to pivot about a caster axis, while said housing allows said steering roller to pivot about a gimbal axis.

8. The method of claim 1 wherein said steering roller is mounted to said stationary frame in such a manner as to allow said steering roller to pivot about a caster axis.

9. A web tracking apparatus for guiding a moving web in a predetermined path of travel relative to a stationary frame, comprising:  
a gimbaled steering roller having a lateral constraint;  
a means for biasing said steering roller in a gimbal direction; and,  
a means for adjusting said bias to achieve desired tracking

10. The apparatus of claim 9 further comprising a housing and spring flexures, wherein said housing is pivotally mounted to said frame such that said housing pivots about a gimbal axis of said steering roller, and wherein said steering roller is mounted on a roller shaft, which said shaft is in turn mounted to said housing by said spring flexures, such that said spring flexures allow said steering roller to pivot about a caster axis, while said housing allows said steering roller to pivot about a gimbal axis.

11. The web tracking apparatus of claim 9 wherein said means for biasing said steering roller in the gimbal direction comprises a spring having an end one and an end two mounted between the frame and one end of said steering roller such that said spring end one is mounted to said frame, and said spring end two is mounted to said steering roller, such that said spring applies a rotational force on said steering roller about a gimbal axis.

12. The web tracking apparatus of claim 11 wherein said means for adjusting said bias comprises applying a pre-load to said spring to achieve desired tracking.

13. The web tracking apparatus of claim 12 wherein said spring is mounted to said frame by attaching a mounting nut to said spring end one, and threading a screw through the frame, such that said mounting nut is threaded onto said screw to apply the desired pre-load on said spring.

14. The web tracking apparatus of claim 9 wherein said steering roller is mounted on a roller shaft.

15. The web tracking apparatus of claim 14 wherein said lateral constraint comprises an edge guide which is rotatably mounted on said roller shaft and is axially slid able relative thereto.

16. The web tracking apparatus of claim 9 further comprising a stopping means for preventing said steering roller from rotating too far in the gimbal direction.

17. A method of web tracking adjustment for guiding a photoconductor loop in a electrostatographic reproduction apparatus on a predetermined path of travel relative to a stationary frame, comprising:

    biasing a steering roller in a gimbal direction; and,

10    adjusting said bias to achieve desired tracking.

18. The method of claim 17 wherein said steering roller has a lateral constraint, and said bias allows the web to ride against said lateral constraint without damaging the web.

19. The method of claim 18 wherein said steering roller is mounted on a roller shaft, and said lateral constraint comprises an edge guide which is rotatably mounted on said roller shaft and is axially slid able relative thereto.

20. The method of claim 17 further comprising a housing and spring flexures, wherein said housing is pivotally mounted to said frame such that said housing pivots about a gimbal axis, and wherein said steering roller is mounted on a roller shaft, which said shaft is in turn mounted to said housing by said spring flexures, such that said spring flexures allow said steering roller to pivot about a caster axis, while said housing allows said steering roller to pivot about a gimbal axis.